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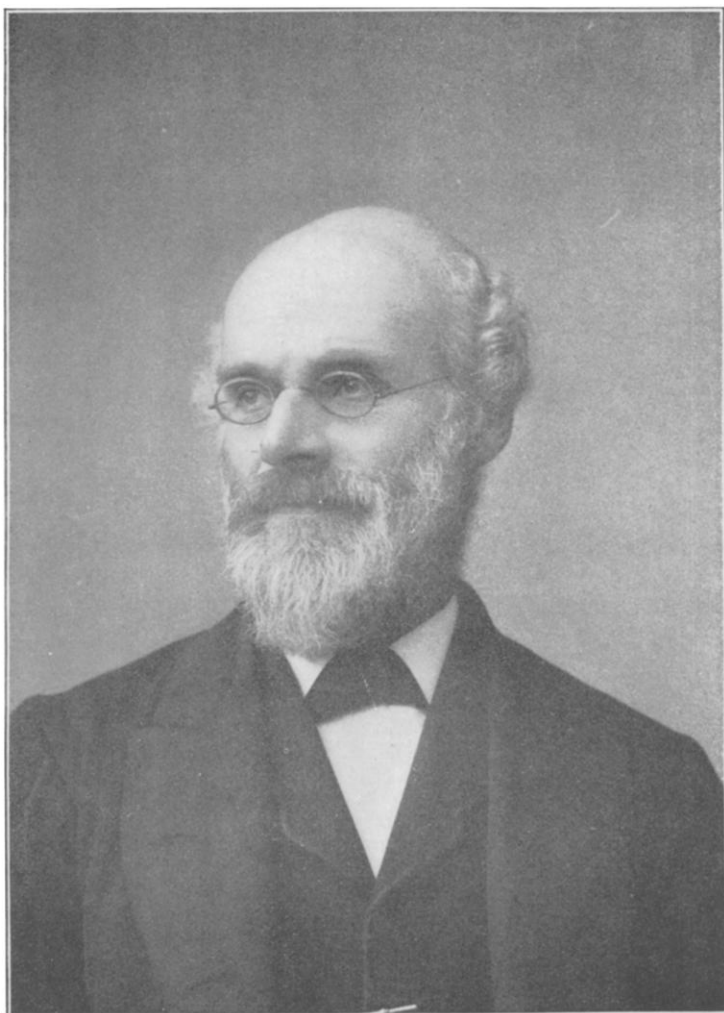
NECROLOGY

EDWARD WALLER CLAYPOLE, B.A., D.Sc. (LOND.)
OF PASADENA, CAL.

A truly wise man, loved and respected by all who knew him, has passed on to the other life in the great unknown. The world is better and science and scientific literature are richer because Edward Waller Claypole has lived in this part of God's universe.

Born in Ross, Herefordshire, England, in 1835, he was the eldest of six children, four sons and two daughters. He came of a line of educated and liberal-minded scholars. His paternal grandfather, a clergyman, withdrew from the Church of England to become a Baptist minister. His father, also a Baptist minister, educated in the University of Edinburgh, was a classical scholar. His mother, Elizabeth Mary Blunt, a niece of the English diplomat, Sir Waltham Waller, was brought up in the home of the latter. She received an education superior to that usually given to the young women of her day. This heritage of true refinement and culture, of intellectual ability, of love of justice and truth, of independence of thought, and of moral courage has been handed down to us increased and enriched.

He was educated by his father in classics and mathematics, but his first lessons in science came to him from two sisters of his mother. While he was visiting at their home they interested him in collecting and naming the plants and fossils found in that vicinity. These first lessons in science were not from text-books but from Mother Nature, and it may be that at this time he learned not only something of botany and geology but also, unconsciously, something of the value of the laboratory method in teaching science, which method was one source of power in his later years. At the age of fifteen he began to give instruction in his father's private school, and about two years later left home to teach at Abingdon.



EDWARD WALLER CLAYPOLE

In 1854 he matriculated from the University of London, the only English university then open to dissenters. This institution, which gave no instruction, but granted degrees on examination, required of all candidates for the baccalaureate degrees a preliminary training in one of certain accredited schools. Since circumstances made it impossible for him to fulfil this requirement, the young scholar, a dissenter, found no university in all England open to him. Ten years later when this barrier was removed, he passed the examinations for the degrees of B.A. and B.Sc. He might, at this time, by taking further examinations, have obtained the degree of D.Sc., but chose to wait until that degree should be granted for original work, and finally took it in 1888.

When nineteen years old, he and two of his younger brothers, Alfred and Henry, all of whom were away from home supporting themselves, undertook as a means of recreation the publication of a magazine called "*The Home Journal*." The magazine was not intended for the public and was not printed. Edward, the best penman, and editor-in-chief, received and copied the articles written by the three contributors, and illustrated the publication with maps and drawings which showed marked artistic ability. The titles of some of the articles that he wrote are "The Power of the Age" (the steam engine), illustrated with section drawings of a locomotive, "The Parallelogram of Forces," "Corals," "The Life of Demosthenes," "First Oration Against Philip" (translated from the Greek), "Laws of Refraction," "Chemical Nomenclature," "Geological Formation of Niagara." This last article was illustrated by three maps, a geographical map of the country in the region of Niagara, a section showing the geological strata, and a bird's-eye view of the Niagara river and its vicinity from its head at Lake Erie to its mouth at Lake Ontario. It is of interest to note this work because it shows that already there had been laid the foundation for that breadth and depth of knowledge which afterwards made him distinguished.

In 1865 he was married to Jane Trotter, of Coleford, England, a woman of rare beauty of character and moral force. Of the three children born to them, his son Arthur, the oldest, was killed in 1875 by falling from a moving railroad train. The twin daughters, Edith and Agnes, who survive him, have by their original work already won a place among the scientific workers in this country.

A few weeks after the birth of the twins Dr. Claypole lost his beloved wife—a blow coming as it did at so critical a time in his intellectual life was doubly felt.

He was appointed tutor of classics and mathematics in Stokes-Croft College, Bristol, England, in 1867, where he remained for five years. Then there came a crucial test which proved him to be a hero. One of the highest types of heroism known to the world has been shown by those men who, for the love of truth and their unswerving loyalty to their convictions, have suffered persecution. Such a man was Socrates. Such a man was Dr. Claypole. The church at that time branded Darwin's theory of evolution as heresy. Dr. Claypole saw that it was truth. And because he was firm in his determination to teach the truth he was compelled to resign his position at Stokes-Croft College. How bitter was the cup he drank none of us can realize. He was already sore at heart over the recent loss of his wife, and this step took away the means of support for his three motherless children. But the clouds seemed about to scatter, for he was appointed professor of mathematics and natural science in the University College at Aberystwyth, Wales. At the last moment religious persecution again met him, and he was not permitted to begin work at this institution.

So in October of 1872, leaving his little children in care of his parents and sister, he came to this land of freedom in thought and speech, but here, too, he found the same intolerant spirit. Finally, after a year of struggle and patient waiting, he was, through the friendship of Edward Everett Hale, appointed to the professorship of natural science at Antioch College, Yellow Springs, Ohio. In 1879 he married Katherine Benedicta Trotter, of Montreal, Canada, a second cousin of his first wife, and a woman well fitted to be the companion and helpmate of such a man. He remained at Antioch College until 1881 when, on account of financial difficulties, its doors were temporarily closed. In the fall of that year he was appointed paleontologist to the Second Geological Survey of Pennsylvania, and spent the next two years in the field. After the close of this engagement in 1883, he accepted the newly established chair of natural sciences in Buchtel College, Akron, Ohio, filling it for fifteen years. Then, on account of his wife's failing health, he resigned and moved to southern California, taking the professorship in geology and biology at Throop Polytechnic

Institute, Pasadena, a position held until August, 1901, when his work in this world was completed.

Dr. Claypole possessed a most happy combination of strong characteristics which fitted him to attain eminence both as a teacher and as a scientist. He loved and sought for the truth and would make any sacrifice to uphold it. He had a judicial mind which, having collected all possible evidence, sifted it, weighed it carefully, and considered it from every side before reaching a conclusion, and he had that patience and perseverance which Nature demands from those who successfully interpret her records.

As a teacher he was one of the pioneers in using the laboratory method. He made no mental paupers by always "giving men truth instead of training them to search for it." His students were trained to see, to observe accurately, to record their observations carefully by descriptions and by drawings, to think and reason about them. They were taught the unity of nature and natural law. Their minds were not stored with isolated truths, but the broad relations and general bearing of every truth were made plain to them. Yet his greatest power as a teacher lay in the influence of his character and example upon his pupils. They caught his love for Nature and her truths, his accurate methods of work, his precision of thought, his indomitable perseverance, his inexhaustible patience. Daily contact with such a man was an inspiration even to the dullest and most indifferent of students. They learned to love their work and to love the man who could awaken in them so deep and lasting a desire for knowledge. Many are the tributes paid by those who knew him as a teacher. One of his former students, now a professor in a large eastern university, said to me, "Dr. Claypole is the best teacher that I ever had." Prof. George M. Richardson, of Leland Stanford Jr. University, a student of Dr. Claypole's for one year at Antioch College, said, "That one year brought about a complete change in my attitude toward education, a complete change in my ideas as to what education meant, and Professor Claypole was alone responsible for it. I have always felt that he marked out for me my life work. I have never known another whose every trait so universally called forth love and admiration." Who can tell how many lives he has inspired with a love of knowledge and a desire to attain to higher ideals of manhood or womanhood!

Of the sciences, geology was the most attractive to him, and he is best known for his valuable additions to knowledge in this field. But his many contributions to scientific literature in the fields of botany, zoology, and entomology tell us how truly he loved Nature in all her manifestations, and how familiar he was with every branch of natural science.

His first report of original work in geology was given in 1871 while editor of the Proceedings of the Bristol (England) Naturalists' Society. In that year and the next he read a series of three papers before the society, "On the subsidence of the southwest counties of England during the present era," and one paper on "The development of the carboniferous system in the neighborhood of England." These earliest writings show the same characteristics that made all of his contributions to knowledge so valuable. In them we find that mastery of the English language which gave such charm as well as force and power to all of his writings and discourses; that clear, concise, logical thought, that completeness of evidence, that appreciation of the relation and value of facts, and that ability to interpret correctly the records of Nature.

Glacial geology was for him a most fruitful field of study. His paper on "Preglacial formation of the beds of the Great Lakes," published in the Canadian *Naturalist* in 1877, and the one read at the meeting of the American Association for the Advancement of Science in 1881, entitled "Evidence from the drift of Ohio, Indiana, and Illinois in support of the preglacial origin of the basins of Lakes Erie and Ontario," were epoch-making. The views presented in these articles were vigorously combated by some of the other foremost geologists. But his facts were indisputable and his arguments invincible, so that to-day his conclusions reached at that time stand as geological truths.

Another plenteous harvest came from his work on the Second Geological Survey of Pennsylvania. Besides the two volumes of the Survey Reports, as a direct result of this period of work, he presented to various scientific associations or published twenty-eight valuable papers. It was on this survey that he found the fossil remains of the hitherto undiscovered genus of ancient fish *Palaeaspis*. After much patient labor he classified this fossil and proved beyond any question that these were the "oldest indisputable vertebrate animals the world has yet seen." To him also be-

longs the honor of describing *Glyptodendron*, the oldest of the fossil plants. Another of his rich gifts to American geology and paleontology was his work on the Devonian Fishes of Ohio.

To Dr. Claypole the microscope was a means for many excursions beyond the pale of the known. He valued it not only as an aid to scientific research but equally as a means of general education and as a revealer of nature's beauties and mysteries to all who would patiently look and search. He took an active part in the meetings of the American Microscopical Society, attending them whenever possible, contributing to its proceedings, and serving as its President in 1897. His address on this occasion on "Microscopical Light in Geological Darkness" was an interesting and brilliant exposition of the secrets revealed by the microscopic study of rocks, secrets which give clues to the geological events in the early history of the world.

His wide interest in natural science was also shown by the active part taken in the many scientific organizations of which he was a member. He was one of the founders and the first president of the Ohio Academy of Sciences, a fellow of the Geological Societies of Edinburgh and London, vice-president of section E at the meeting of the American Association for the Advancement of Science in 1897, one of the original fellows of the Geological Society of America, and one of the founders and editors of the *American Geologists*.

In the discussions of papers at the meetings of scientific associations he was a power and a promoter of peace when individual animosities began to appear. Often when a discussion had become personal and bitter has he carried it back to the high plane of scientific debate.

His was a life of simplicity, purity, and nobility, "full of unselfish service to others. To have come close to his great nature was a mental and a moral inspiration, and to have known him thus was to love him always." He belongs to that group of men worthy of the tribute paid to Darwin: "His was a gentle, patient, reverent spirit, and by his life has not only science but our conception of Christianity been advanced and ennobled."

ROBERT ORTON MOODY.

